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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,013	11/26/2003	John Groe	1502	7557

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EXAMINER
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HANNON, CHRISTIAN A

ART UNIT	PAPER NUMBER
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2618

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/724,013

Applicant(s)

GROE ET AL.

Examiner

Christian A. Hannon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                        |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____   |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 & 3-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Spencer et al (US 6,871,052), herein Spencer.

Regarding claims 1 & 5, Spencer teaches a dual diversity receiver that includes first and second antennas to receive first and second radio signals, wherein the first and second antennas produce first and second antenna signals that are representative of the received radio signals (Figure 5, Items 102a, 102b; Column 3, Lines 38-45; Spencer), the receiver comprising, a first LNA that receives the first antenna signal (Figure 5, Items 102a, 104a; Spencer) and produces a first amplified signal, a second LNA that receives the second antenna signal (Figure 5, Items 102b, 104b; Spencer) and produces a second amplified signal and selection logic (Figure 5, Items 106, 108, 116, 118, 532, 534, 536; Spencer) to determine which of the first and second amplified signals has greater received power characteristic, and to select the LNA associates with that amplified signal so that its output is processed by the receiver (Column 3, Lines 51-

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67; Column 4, Lines 1-2; Spencer). It is noted that the examiner is interpreting "received power characteristic" to be analogous to the RSSI which is a ratio of signal to noise power. Furthermore claim 5 reads as a analogous method claim for operating the dual diversity receiver recited in claim 1. Spencer recalculates RSSI at each incoming packet's preamble (Column 1, Lines 46-67; Spencer), thereby constituting repeating the process of determining and selecting.

With regard to claim 3, Spencer teaches the receiver of claim 1, wherein the selection logic comprises logic to measure the received power characteristic (Figure 5, Items 106, 108, 116, 118, 532, 534, 536; Column 3, Lines 51-67; Column 4, Lines 1-2; Spencer). Spencer shows that the received power characteristics of each antenna are channeled through each respective I/Q branch and fed into the DC (Figure 5, Item 536; Spencer) for the actual comparison. The examiner is interpreting the LNAs, Mixers, and filters along with the DC to comprise Spencer's selection logic.

In regard to claim 4, Spencer teaches the receiver of claim 1, wherein the selection logic comprises logic to select the alternate LNA when its received power characteristic exceeds that of the selected LNA (Column 3, Lines 51-67; Column 4, Lines 1-2; Spencer). It follows from Spencer's teachings that since the received power characteristic is reexamined for each preamble of a data packet that whichever LNA had the greater received power characteristic would be selected.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spencer in view of Floyd (US 2005/0068099).

Spencer teaches the receiver of claim 1, however Spencer fails to go into detail about the LNAs wherein the first and second LNAs further comprise first and second bias generator circuits that control the operation their respective LNA based on a selection signal. Floyd teaches wherein the first and second LNAs further comprise first and second bias generator circuits that control the operation their respective LNA based on a selection signal (Page 2, [0028]; Floyd). The digital control circuitry is being interpreted by the examiner to be analogous to the selection signal, since it selects a gain level of the LNA. It would have been obvious to combine the teachings of Spencer to include wherein the first and second LNAs further comprise first and second bias generator circuits that control the operation their respective LNA based on a selection signal, such as that taught by Floyd, in order to provide for a variable gain within the LNAs.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spencer in view of Wright et al (US 5,696,798).

Spencer teaches the method of claim 5, however Spencer fails to further teach the method comprising use of a digital filter to measure the received power characteristic. Wright et al teach a method using a digital filter to measure a received power characteristic (Column 3, Lines 11-16; Wright et al). It would have been obvious to combine Spencer to include a digital filter to measure a received power characteristic, such as that taught by Wright et al, in order to provide for fewer circuit components and make a smaller chip footprint.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Moriyama et al (US 6,571,090) disclose a radio receiver and diversity receiver.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian A. Hannon whose telephone number is (571) 272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christian A. Hannon  
March 15, 2006



QUOCHIEN B. VUONG  
PRIMARY EXAMINER